0.5% TRITON™ X-100 additive by weight. The mold pattern tooling used to make the film's micro structured surface had a pattern face formed to define channels with nested rectangular channels, 8 mil deep. In cross section, this film had a configuration like the film of **FIG. 18**, and with four small rectangular shaped channels at the base of a larger rectangular shaped main channel (the same configuration as Pattern 5 in Table I of U.S. Pat. No. 5,728,446). The relative dimensions and angles for the microstructured polymer surface of this film is detailed as follows: primary groove angular width 331=10°, primary groove spacing 332=229 microns, primary groove depth 333=203 microns, notch included angle **334** (see **FIG. 18***a*)=95°, secondary groove angular width 335=10°, secondary groove spacing 336=50 microns, secondary groove depth 337=41 microns, primary peak top width 338=29 microns, secondary peak top width 339=29 microns, primary groove base width 340=163 microns, secondary groove base width 341=13 microns, and primary groove wall angular width 342=10°. The channels were aligned to run down the incline defined by the substrate **280**.

Example 16

[**0177**] A polythene film having a microstructured channel surface with linear channels. The polythene film contained a 0.5% TRITON™ X-100 additive by weight. The mold pattern tooling used to make the film's microstured surface had a pattern face formed to define channels with 40 degree groove angles, 45 mil deep. The channels were aligned to run down the incline defined by the substrate **280**.

[**0178**] The five material samples of polythene film described above were tested under three dynamic air flow/water flow conditions, as follows:

[**0179**] Case 1—air flow at 152 meters/minute and water flow at 100 grams/minute

[**0180**] Case 2—air flow at 152 meters/minute and water flow at 330 grams/minute

[**0181**] Case 3—air flow at 305 meters/minute and water flow at 330 grams/minute

[**0182**] The results of the evaluation of the five Examples 12-15 under the conditions of Cases 1, 2 and 3 are detailed in Table 3 below.

TABLE 3

Active Evaporation Testing Results
(Change in Water Temperature (ΔT, in degrees Farenheit))

	Case 1	Case 2	Case 3
Example 12	0.7	0.65	1.0
Example 13	1.8	1.2	1.7
Example 14	1.8	1.4	1.4
Example 15	1.9	1.5	1.3
Example 16	1.6	0.6	1.3

[**0183**] As seen by a comparison of Example 12 (flat film) with Examples 13-16 (microstructured film), the use of the microreplicated structured surface in connection with active fluid and air flow for enhancing evaporation very significantly affects the rate of evaporation. In almost all instances, the evaporative rate is significantly increased relative to a smooth film surface under the same conditions. The relationship of opposed air flow and water flow rates is also illustrated, as well as a consideration of the topography of the microreplicated surface optimization for certain conditions.

[**0184**] **FIG. 17***b* illustrates the condition where the thickness of the liquid **295** on the microstructured film surface **290** is greater than the depth of the channels, thus communicating channels over adjacent ridges. In this situation, the microstructured surface of the film **290** still affects the exposed surface area of the liquid, forming undulations therein as the liquid **295** passes over the ridges. In this case, the thickness of the liquid is thin enough that it "sees" the film surface topography, and thus the microstructured surface has an effect on (enlarges) the surface area of the liquid **295** that is exposed to the ambient. As the liquid thickness increases, the undulations are less pronounced, and as a result, the effect of the topography on the exposed surface area of the liquid lessens. **FIG. 17***b* illustrates one liquid flow rate over the film **290**. If the flow rate is lessened, the thickness of the liquid **295** on the film **290** will decrease, and eventually assume the condition like that illustrated in **FIG. 16***b*. In either event, as long as the thickness of the liquid is such that the topography of the microstructured surface affects the exposed surface area of the liquid (by affecting its wetting out characteristics and meniscus characteristics), liquid evaporation rates will be enhanced.

[**0185**] The present invention describes a fluid transport microstructured tape assembly. The microstructured surface provides a means to wick fluids that are aqueous or non-aqueous in nature. The surface can be comprised of a cast acrylic resin (for durability) or a polyolefin material. The adhesive provides a means to mount the tape to a structure in a manner that is consistent with desired fluid flow. The tape can be made with a variety of additives that, for example, make the tape flame retardant, hydrophillic, germicidal, hydrophobic, or capable of wicking acidic, basic or oily materials. The tape can utilize "V"-shaped or "U"-shaped or rectangular shaped micro structures (or combinations thereof) that are aligned in a radial intersecting, linear or any other custom or randomized pattern that is desired for optimal fluid flow in an industrial design. The tape can be used in active or passive applications. The active systems constitute a situation where a potential is applied across the tape surface and becomes a driving force for volume fluid movement. Active systems can be designed into applications with a manifold or other device that applies a potential across the tape surface, or can be placed to utilize existing sources of potential (i.e., wind or pressure differential). The tape can transport and remove fluid through capillary action by combination with a collection point such as a drain, absorbent material or collection pan. The tape can also be used to deliver fluids through the same capillary mechanism. The tape can also disperse fluid through evaporative mechanisms.

[**0186**] The inventive tape provides an attachment means that allows for negotiation over complex structures with minimal moisture ingress. The attachment means could be any means for attachment such as adhesive, mechanical, electrostatic, magnetic, or weak force attachment means. If the attachment means is an adhesive, the adhesive could be structural or pressure sensitive, and include the broad class of acrylates, non polar acrylates, synthetic rubber, polyolefin, or natural rubber. Mechanical attachment means could